

METHOD AND APPARATUS FOR PERFORMING QUALITY  
VIDEO COMPRESSION AND MOTION ESTIMATION

ABSTRACT OF THE DISCLOSURE

5       An apparatus and method for performing two-pass real time video  
compression is provided. Tactical decisions such as encoding and quantization  
values are determined in software, whereas functional execution steps are performed  
in hardware. By appropriately apportioning the tasks between software and  
10 both hardware complexity and data transfer requirements. One key concept that  
allows the compression unit to operate in real time is that the architecture and  
pipelining both allow for B frames to be executed out of order. By buffering B  
frames, two-pass motion estimation techniques can be performed to tailor bit usage  
to the requirements of the frame, and therefore provide a more appealing output  
15 image.